

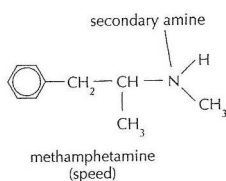
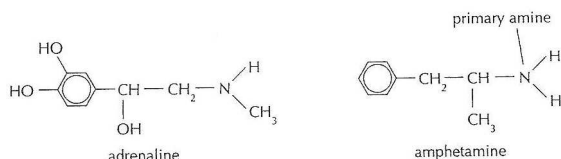
Stimulants

Stimulants are drugs that increase a person's state of mental alertness.

AMPHETAMINES

Amphetamine is chemically related to adrenaline, the 'flight or fight' hormone. It is a sympathomimetic drug, that is, one which mimics the effect of stimulation on the sympathetic nervous system. This is the part of the nervous system which deals with subconscious nerve responses, such as speeding up the heart and increasing sweat production.

Amphetamines were initially used to treat narcolepsy (an uncontrollable desire for sleep) and were issued to airmen in World War II to combat fatigue. In the 1950s and 1960s they were used as anti-depressants and slimming pills. Regular use can lead to both tolerance and dependence. Short-term effects include increase in heart rate and breathing, dilation of the pupils, decrease in appetite followed by fatigue and possible depression as the effects wear off. Long-term effects include weight loss, constipation, and emotional instability.

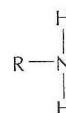


ECSTASY (ALSO KNOWN AS 'E')

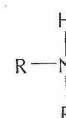
Modifications to the structure of amphetamines have produced several **designer drugs**. One of these, ecstasy, may relieve the symptoms of Parkinson's disease but is frequently abused. It produces mental relaxation, increased sensitivity to stimuli, and sometimes hallucinations. It can produce severe and sometimes fatal effects even after a single dose.

CLASSIFICATION OF AMINES

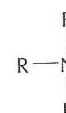
primary (one - R group attached to N atom)



secondary (two - R groups attached to N atom)



tertiary (three - R groups attached to N atom)



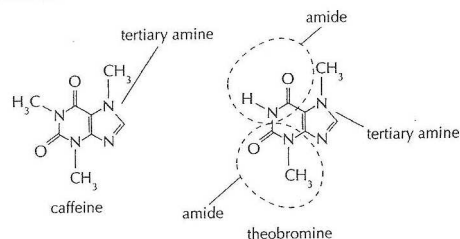
CAFFEINE

Caffeine is the most widely used stimulant in the world. It is present in coffee, tea, chocolate, and cola drinks and is also found in some pain killers and other medicines. There is evidence that consuming 400 mg of caffeine a day, or more, can cause dependence and physical side effects.

Caffeine content of different products

cup of ground coffee	80–120 mg
cup of instant coffee	65 mg
cup of tea	40 mg
can of cola	40 mg
bar (100 g) of plain chocolate	80 mg

Caffeine is a diuretic (causes frequent urination) and increases alertness, concentration, and restlessness. It is included in



many common painkillers as it speeds up their effects. Like nicotine, morphine, codeine, and cocaine, caffeine is an alkaloid. Alkaloids are nitrogen-containing compounds of plant origin containing heterocyclic rings (rings containing other atoms as well as carbon) and a tertiary amine group. A compound with a similar structure to caffeine, which is also found in chocolate, is theobromine (although note that it contains no bromine!).

NICOTINE

It is the nicotine in tobacco that is largely responsible for causing approximately one third of the world's population to be addicted to smoking. Stopping smoking can produce temporary withdrawal symptoms that include a craving for tobacco, nausea, weight gain, insomnia, irritability, and depression. Like amphetamines nicotine is sympathomimetic. It increases concentration and relieves tension and the physical effects include increased heart rate and blood pressure, and reduction in urine output. The long term effects include increased risk of heart disease and coronary thrombosis. Its stimulatory effects may also lead to excess production of stomach acid leading to an increased risk of

peptic ulcers. The other well-known risks of smoking include chronic lung diseases, adverse effects on pregnancy, and cancers of the lung, mouth, and throat.

